

(No Model.)

A. NERACHER.  
GUTTER.

No. 548,082.

Patented Oct. 15, 1895.

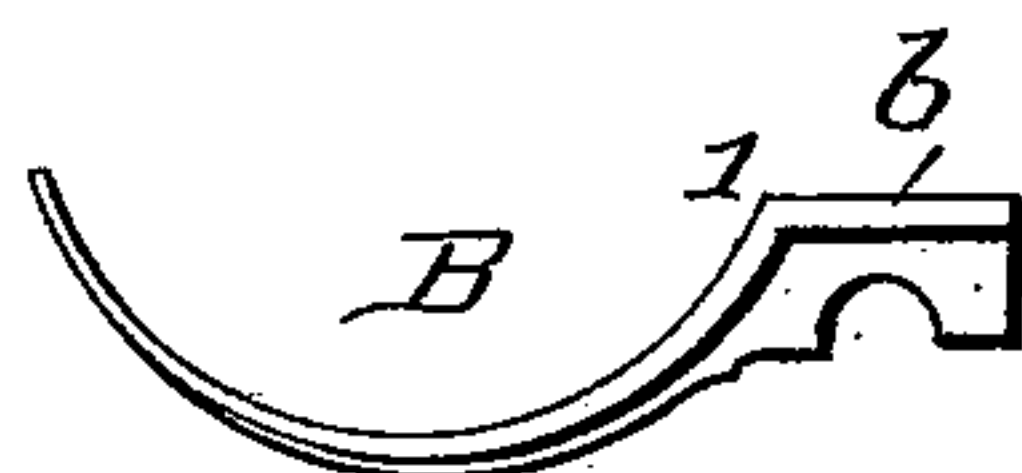
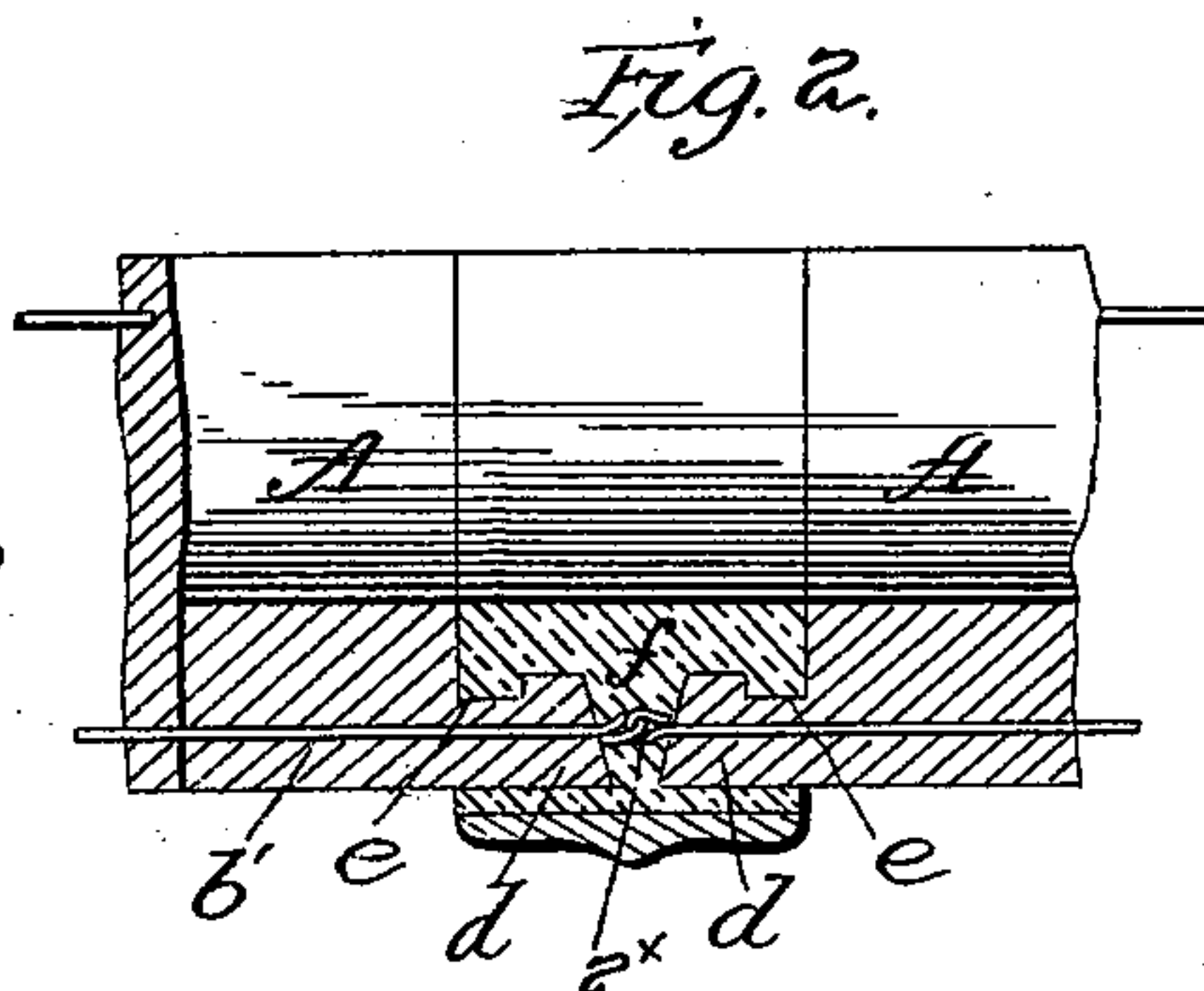
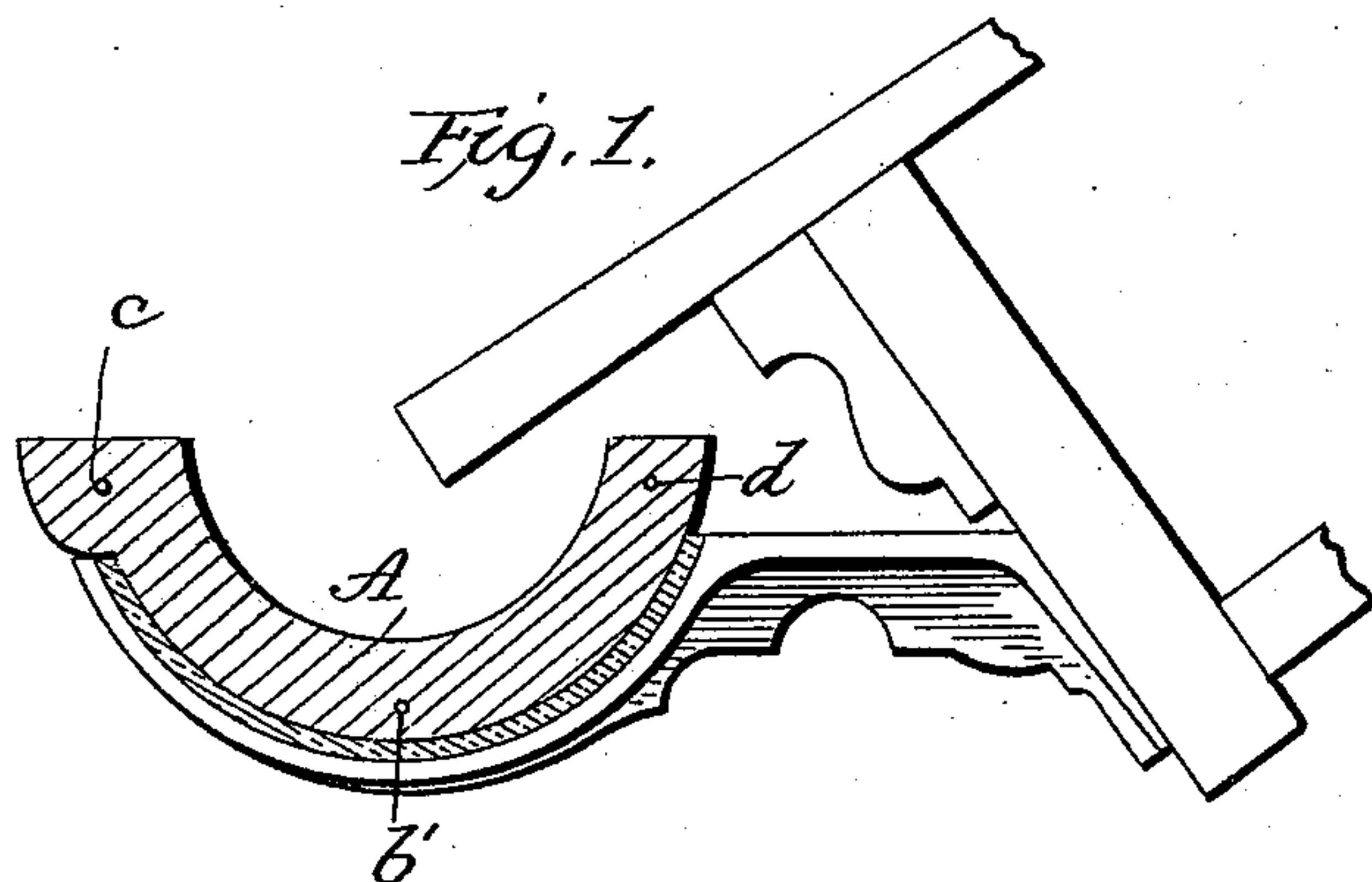
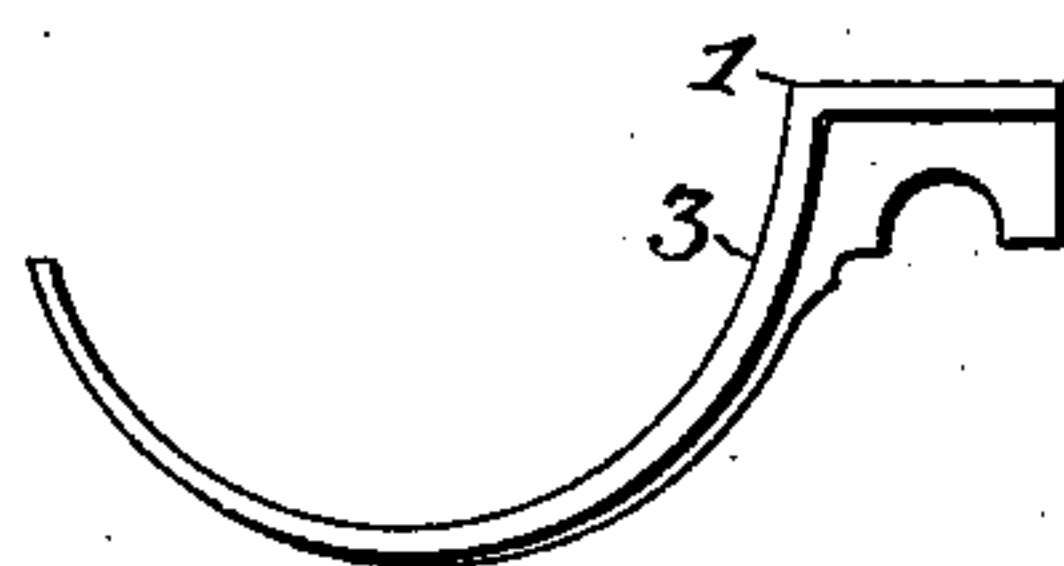
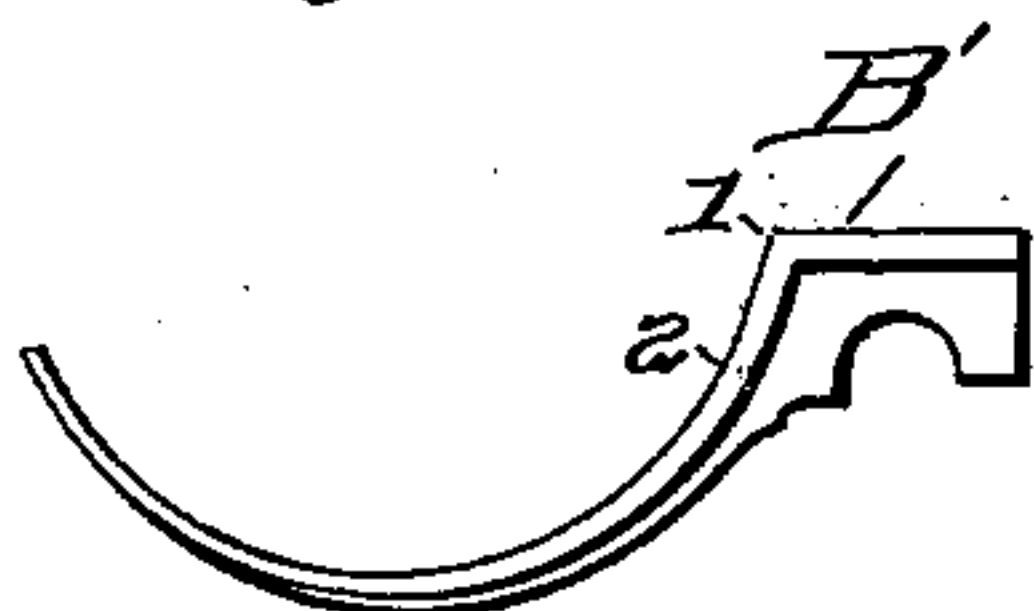


Fig. 3.



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# UNITED STATES PATENT OFFICE.

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## GUTTER.

SPECIFICATION forming part of Letters Patent No. 548,082, dated October 15, 1895.

Application filed April 14, 1894. Serial No. 507,553. (No model.)

*To all whom it may concern:*

Be it known that I, ADOLPH NERACHER, a citizen of the United States of America, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Gutters, of which the following is a specification.

My invention relates to gutters for the eaves of buildings.

The object sought to be obtained in my invention is to provide a gutter capable of resisting decay or corrosion, simple in construction, of ornamental appearance, and when combined with a particular form of bracket adapted to be made practically continuous and to be adjusted at the proper inclination in order to afford perfect outflow or drainage.

The details of construction of my invention are fully described hereinafter, and are illustrated in the accompanying drawings, in which—

Figure 1 shows a sectional view of the gutter in place. Fig. 2 shows a longitudinal vertical section, taken in the center of the gutter, through the joint between meeting sections. Fig. 3 illustrates a series of brackets.

In the drawings, A represents a section of the gutter. It is composed of cement, which is molded into a trough of semicylindrical or approximately semicylindrical shape and of uniform thickness. The sections may be made of any desired length, preferably about four feet, and they may be all made alike. Being made of cement or clay or like plastic or molded material and in this uniform shape and dimensions they can be manufactured cheaply, and the material is such that no corrosion or disintegration occurs in use, but the sections harden instead upon exposure to the atmosphere and become stronger and more firm. I prefer to cover them with a coating of a preparation of tar, which gives them an ornamental appearance, and also, preferably, I coat the iron brackets with the same material.

In putting up this form of gutter, since the sections are of uniform thickness and dimensions, it is necessary that the supports should be successively lower from the upper to the lower end of the gutter in order to secure the proper inclination. This inclination I secure by forming the series of brackets of varying

shapes. It is inconvenient and not favorable to the appearance of the front of the building to set the brackets upon the cornice at varying elevations. Sometimes the width of the board does not permit it, and in any case such unequal arrangement mars the appearance. To avoid these difficulties I form the brackets in series, in which the shanks *b* of the brackets B are made of uniform shape and dimensions, while the bend *c* is made in varying proportions. For illustration, in Fig. 3 the bend *c* of the first bracket B is a curve from the point 1, corresponding to the contour of the gutter-section. The next bracket in order in the series (marked B') is formed with a downwardly-extending shank 1 to 2, the curve of the bow beginning at the point 2 and from that point conforming to the contour of the gutter. The third bracket in the series has a still longer shank from 1 to the point 3, below which is the same curve as before. The series continues in the same manner, each in order, having longer vertical shanks, connecting the main shank of the bracket with the curved part which directly supports and fits the gutter. On this principle of construction the shanks throughout the series of brackets are made uniform, while the supporting curves or arms are made successively lower by reason of the successive variation of the shanks. The brackets support and hold the gutter in its relation to the edge of the shingles or slate or other roof-covering, as shown in Fig. 1. In order to connect the sections to each other and to the brackets, I have devised the method and construction shown in Fig. 2. The construction of the end of the gutter-sections appears in said figure. The ends *d* are beveled, and back of the bevels the ends are rabbeted and are also formed with a groove *e* at the back of the rabbets. This forms a recess for a cement joint, which is made by filling the rabbet, the groove, and space between the bevels *d* with the cement *f*. Preferably, in putting on the sections I leave a space, as shown in Fig. 2, between the ends. As will be seen by reference to Fig. 2, I support the contiguous ends of the sections upon the bracket. The upper face of the bracket is plain, and upon it I place a layer of cement when putting up the gutter, and on the fresh cement I lay the end of the gutter-sections in



the manner shown in Fig. 2. These ends adhere to the layer of fresh cement upon which they are placed. Then I fill the cavity between the ends  $d$   $d$ , and all the space in the 5 rabbet and grooves flush with the upper surface of the sections with fresh cement, the central layer part of which is placed down in contact with the layer of cement upon the bracket. This adheres to the cement upon the 10 bracket, which thus forms a bond to connect the gutter to the bracket, while at the same time the body of cement holds the sections together.

I prefer to form the bracket with a rib, but 15 any suitable form of cross-section may be used instead.

In putting up this gutter the brackets, taken in their proper order, are set with their shanks all on the same line, the construction of the 20 brackets themselves giving the proper amount of slope. After the brackets are put in place the sections of the gutter are laid in the manner above described, and as the cement hardens they become fixed in place.

I have shown a shank with an inclined face 25 fitting the particular form of cornice shown; but, of course, this face will be changed to suit the kind of cornice for which it may be designed.

I do not limit myself to the particular form 30 of connection between the gutter-sections nor to the particular form of brackets.

While the gutter-sections, made of cement, asphaltum, or like material which is capable 35 of being molded into form and then hardened, are exceedingly durable, the material also admits of reinforcement. This I secure by means of wires embedded in the material in the process of construction of the sections. 40 These wires are shown at  $b'$ ,  $c$ , and  $d$ . The bottom wire  $b'$  and the wire  $c$  of the outside edge I prefer to make somewhat larger than the wire  $d$ , which is embedded in the inner edge, since the greater strain comes upon 45 these. The bottom wire  $b'$  takes the tensile strain and prevents sagging of the gutter, while the wire  $c$  of the outside edge of the

gutter resists the pressure of ladders, which may be made to bear upon it. In making these sections the wires are embedded in the 50 soft material and the ends are left projecting in length sufficient to be connected when the sections are placed to form the gutter. The wire may be of any desired size—ordinary 55 No. 16 gage is sufficient—and should be capable of readily bending and especially of sustaining tensile strain. When the ends of the sections are brought near as possible to each other, the ends of the wires are bent to 60 interlock, as shown at  $2^x$  in Fig. 2. These may be closely drawn together by any suitable nippers and left in the space between the section ends. The spaces between the sections being filled with cement, as shown 65 at  $f$ , a close joint is formed, and the interlocking ends of the wires are held and bound firmly against separation, so that the wires are practically continuous throughout the entire length of the gutter. As the wires are 70 entirely covered by the cement, they are protected from corrosion and will last as long as the cement, which is practically proof against atmospheric influences.

Having thus described my invention, what I claim as new, and desire to protect by Letters Patent, is— 75

1. A gutter made up of sections, the wire extending through said sections and acting to bind the same together and the cement filling interposed between the sections and covering 80 the wire, substantially as described.

2. A gutter composed of sections of cement, or equivalent substance, having longitudinal wires embedded therein, said wires being connected at the joints and covered with a cement-filling at said joints, substantially as described. 85

In testimony whereof I affix my signature in presence of two witnesses.

ADOLPH NERACHER.

Witnesses:

HENRY E. COOPER,  
MARGARET V. COOPER.